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A Revision of Oriental and Eastern Palaearctic Species of *Metopia* Meigen (Diptera: Sarcophagidae)

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With 4 figures

Summary

A taxonomic revision of Oriental and eastern Palaearctic species of *Metopia* Meigen, 1803 is presented, and a key to all species is provided. *Metopia tshernovae* Rohdendorf is recorded from the Oriental region, and *M. sauteri* (Townsend) from the Australian region for the first time.

Five new synonyms are proposed, viz., *M. zosea* Séguy, **nov. syn.** of *M. sauteri* (Townsend); *M. instruens* Walker, *M. inspectans* Walker, and *M. stackelbergi* Rohdendorf, **nov. syn.** of *M. roserii* Rondani; and *M. sosicles* (Walker) **nov. syn.** of *M. campestris* (Fallén). *Metopia sinensis* **nov. spec.** is described from China.

Zusammenfassung

Eine taxonomische Revision orientalischer und ostpaläarktischer Arten der Gattung *Metopia* Meigen, 1803 und ein Schlüssel für diese Arten werden vorgelegt. Zum erstenmal werden *Metopia tshernovae* Rohdendorf aus der orientalischen Region und *M. sauteri* (Townsend) aus der australischen Region nachgewiesen.

Fünf neue Synonyme werden vorgeschlagen: *Metopia zosea* Séguy, **nov. syn.** von *M. sauteri* (Townsend); — *M. instruens* Walker, *M. inspectans* Walker und *M. stackelbergi* Rohdendorf, **nov. syn.** von *M. roserii* Rondani; — und *M. sosicles* (Walker), **nov. syn.** von *M. campestris* (Fallén). *Metopia sinensis* **nov. spec.** aus China wird beschrieben.

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1. Introduction

The genus *Metopia* Meigen, 1803 is represented by several species in all zoogeographical regions. PAPE (in press a, b) revises the Afrotropical and Neotropical species and may serve as a taxonomic synopsis of the Nearctic species. Species-limits within the western Palaearctic region seem well-defined by the papers of VENTURI (1952) and ROHDENDORF (1955, 1971), but a bewildering number of species-group names are still nomina dubia within *Metopia*. Many older types are lost, but nomenclatural changes may still be awaited, especially when female specimens of *Metopia* sensu stricto can be identified with certainty.

Oriental and eastern Palaearctic species of *Metopia* are treated by FAN (1965) and KURAHASHI (1970), who cover the Chinese and Japanese fauna respectively, and by LOPES et alii (1977), who provide a list of Oriental species. But these papers do not present a thorough treatment of all species-group names, which have been applied to species of *Metopia* within this region, and species-limits are blurred.

In the present paper a taxonomic revision of *Metopia* from the Oriental region and the Palaearctic region east of the Ural Mountains is provided. Notes on distribution and biology are included.

Abbreviations for depositories:

BMNH = British Museum (Natural History), London; — *MHNP* = Muséum national d'Histoire naturelle, Paris; — *Rond. Coll.* = The RONDANI collection of Museo Zoologico „La Specola“, Florence; — *USNM* = National Museum of Natural History, Washington, D. C.; — *ZMUC* = Zoological Museum, University of Copenhagen, Copenhagen.

2. Key to Oriental and eastern Palaearctic species of *Metopia*

- | | | |
|------|---|---|
| 1 | Setal row of wing vein R_{4+5} extending distinctly beyond cross-vein $r-m$ | 2 |
| — | Setal row of wing vein R_{4+5} not reaching cross-vein $r-m$ | 4 |
| 2(1) | Wing vein R_1 bare | <i>sauteri</i> |
| — | Wing vein R_1 setose | 3 |
| 3(2) | Basicosta black. Postalar wall bare. Tarsomeres 3—4 of male fore tarsus with elongated hairs | <i>nudibasis</i> |
| — | Basicosta yellow. Postalar wall with a few setae. Male fore tarsus without elongated hairs | <i>sinensis</i> nov. spec. |
| 4(1) | Mid tibia with a strong <i>av</i> bristle | <i>campestris</i> |
| — | Mid tibia without a <i>av</i> bristle | 5 |
| 5(4) | Abdominal $T1+2$ with a pair of median marginal bristles | 6 |
| — | Abdominal $T1+2$ without median marginal bristles | 10 |
| 6(5) | Females | <i>argyrocephala, staegerii, tshernovae</i> |
| — | Males | 7 |
| 7(6) | Tarsomeres of fore tarsus posteriorly with elongated, somewhat curled hairs | <i>staegerii</i> |
| — | Tarsomeres of fore tarsus without specialized hairs | 8 |
| 8(7) | Fronto-orbital plates almost adjoining anteriorly, frontal vitta very narrow but distinct from lunula | <i>tshernovae</i> |
| — | Fronto-orbital plates completely adjoining, totally obliterating frontal vitta anteriorly | 9 |
| 9(8) | Silvery part of fronto-orbital plates covering at least anterior 0.6 and with a gradual transition to the more greyish posterior part | <i>rosarii</i> |
| — | Silvery part of fronto-orbital plates covering anterior 0.4—0.5 and with an abrupt boundary to the grey posterior part | <i>argyrocephala</i> |

- 10(5) Fronto-orbital plates densely silvery pollinose and adjoining anteriorly, totally obliterating frontal vitta *suifenhoensis* ♂
 — Frontal vitta distinct from lunula 11
 11(10) Ocellar bristles weaker than reclinate orbital bristles *roserii* ♀
 — Ocellar bristles as strong as reclinate orbital bristles 12
 12(11) Frontal vitta at level of anterior ocellus 2.0× the width of one fronto-orbital plate. 1—2
 supravibrissal setae *suifenhoensis* ♀
 — Frontal vitta at level of anterior ocellus at least 3.0× the width of one fronto-orbital plate.
 2—4 supravibrissal setae *grandii*

3. Species list

3.1. *Metopia argyrocephala* (Meigen)

Musca leucocephala ROSSI, 1790: 306; preocc., VILLERS, 1789.

Tachina argyrocephala MEIGEN, 1824: 372.

Distribution: Widely distributed on the American continent south to Peru, and throughout the Palaearctic region. In the Oriental region recorded from Sri Lanka, China, Ruykuy Islands, and Taiwan.

Biology: Recorded as kleptoparasite in nests of Vespidae: *Stenodynerus*; — Sphecidae: *Ammophila*, *Bembix*, *Cerceris*, *Chlorion*, *Crossocerus*, *Encopognathus*, *Mellinus*, *Oxybelus*, *Philantus*, *Sphecioides*, *Sphex*; — Apidae: *Halictus*, *Lasioglossum*.

3.2. *Metopia staeegerii* Rondani

Metopia staeegerii RONDANI, 1859: 210.

Metopia rondaniana VENTURI, 1952: 163.

Distribution: Widely distributed in the Palaearctic region east to the Altai mountains. Not in the British Isles.

Biology: Unknown.

3.3. *Metopia tshernovae* Rohdendorf

Metopia tshernovae ROHDENDORF, 1955: 368.

Distribution: Widely distributed in the Palaearctic region. Not in the British Isles.

Recorded for the first time: Oriental region, Thailand: Doi Suthep-Pui National Park, Konthathan waterfall area, 600 m., 1♂, 20—27. X. 1979 (Zool. Mus. Copenhagen Exp.) (ZMUC).

Biology: Unknown.

3.4. *Metopia roserii* Rondani

Metopia roserii RONDANI, 1859: 210.

Metopia instruens WALKER, 1859: 129; **nov. syn.**

Metopia inspectans WALKER, 1859: 128; **nov. syn.**

Metopia stackelbergi ROHDENDORF, 1955: 369; **nov. syn.**

Metopia zenigoi KURAHASHI, 1970: 111.

Type-Material examined:

Lectotype ♂ of *M. roserii*, herewith designated. Type-locality: Germany. Lectotype in good condition but with right hind leg missing; without labels except for the number „704“ (Rond. Coll.). Paralectotype ♂, labels, depository, and identity as the lectotype.

Holotype ♂ of *M. instruens*, Celebes: Macassar (R. WALKER), ex coll. SAUNDERS

(BMNH). No date, but with the number 68—4 written on the label. Holotype in good condition, labelled „*instruens*“ in WALKER's hand.

Holotype ♀ of *M. inspectans*, data and depository as for *M. instruens*, labelled „*inspectans*“ in WALKER's hand. The holotype is somewhat damaged: the head, left wing, and all legs except left fore femur and tibia are lacking. The abdomen has the left side partly crushed.

Distribution: Widely distributed in the Palaearctic region, from western Europe east to Japan. Not in the British Isles. In the Oriental region only recorded from Indonesia (Celebes).

Biology: Unknown.

Note: The specimens, mentioned in VILLENEUVE (1931: 68) as labelled *destruens* Walker, and later in TOWNSEND (1938: 246) as labelled *instruens* Walker, are Chinese specimens of *M. argyrocephala*, deposited in MHNP.

3.5. *Metopia suifenhoensis* Fan

Metopia suifenhoensis FAN, 1965: 300.

Distribution: Japan, China, Korea, Malaya.

Biology: Unknown.

3.6. *Metopia campestris* (Fallén)

Tachina campestris FALLÉN, 1810: 266.

Tachina sosicles WALKER, 1849: 772; nov. syn.

Type-material examined: Holotype ♂ of *Tachina sosicles*; no date, no locality, and no collector. Labelled „*sosicles*“ in WALKER's hand (BMNH). Holotype in bad condition with head and most legs missing, and abdomen mounted on a piece of cardboard pinned with the specimen. I have dissected the terminalia and mounted these in euparal on a separate slide deposited with the holotype.

Distribution: Widely distributed in the Nearctic and Palaearctic regions. From India (Kashmir) and Korea in the Oriental region.

Biology: Recorded from nests of Pompilidae: *Pompilus*; — Vespidae: *Arachnospila*; — Sphecidae: *Ammophila*, *Gorytes*, *Larropsis*, *Sphex*.

3.7. *Metopia grandii* Venturi

Metopia grandii VENTURI, 1952: 166.

Distribution: Widely distributed in the Palaearctic region. Not in the British Isles. The record in *Kurahashi* (1970) of *M. inermis* Allen, 1926 from Japan pertains to the present species.

Biology: Unknown.

3.8. *Metopia sauteri* (Townsend)

Chaetoanicia sauteri TOWNSEND, 1932: 445.

Metopia zosea SÉGUY, 1935: 182; nov. syn.

Metopia amamiensis FAN, 1965: 301.

Nepalometopia brunneipennis ROHDENDORF, 1966: 463.

Type-material examined: Holotype ♀ of *Metopia zosea*, China: Zô-sé, 25. VII. 1926 (O. PIEL) (MHNP). Holotype in good condition.

Distribution: Widely distributed in the eastern Palaearctic (Japan) and the Oriental region.

Recorded for the first time: Australian region, Bismarck Islands: Lanagai Banatam, 1♂ 1♀, 20—24. III. 1962 (Noona Dan Exp.) (ZMUC); — New Britain: Valoka, 1♀, 13. VII. 1962 (Noona Dan Exp.) (ZMUC).

Biology: Often found in association with nests of Sphecidae: *Sphex* (KURAHASHI 1970). Recorded as kleptoparasite in nests of Pompilidae: *Episyron arrogans* (Smith) (ENDO 1980).

3.9. *Metopia nudibasis* (Malloch)

Opsidiopsis nudibasis MALLOCH, 1930: 439.

Distribution: Widely distributed in the Australian, Oriental, and easternmost Palaearctic region. Recorded from the Afrotropical region: Gambia, Kenya, South Africa, Tanzania, and probably widespread.

Biology: Recorded from nests of Pompilidae: *Anoplius*, *Batozonellus*, *Episyron*; — Sphecidae: *Encopognathus*, *Sphex* (KURAHASHI 1970, VERVES 1979).

Note: I have seen three male specimens with fore tarsi specialized as in *M. nudibasis*, but with a completely bare wing vein R₁: Malaya: Sabah, 1 km. S. Kundasang, 1♂, 28. VIII. 1983 (G. F. HEVEL & W. E. STEINER) (USNM); — Japan: Okinawa, Chizuka, 1♂, VII.—IX. (no year), (G. E. BOHART & C. L. HARNAGA) (USNM); — India: Karnataka, Bangalore, Bannerghatta, 1♂, 27—31. X. 1977 (Zool. Mus. Copenhagen Exp.) (ZMUC). Further material is required to decide whether these are aberrant specimens of *M. nudibasis* or represent a distinct species.

3.10. *Metopia sinensis* nov. spec. (Figs. 1—4)

Diagnosis: Head with gena almost obliterated by large eyes. Lunula with reduced setosity. Wing vein R₄₊₅ setose beyond cross-vein r-m. Mid tibia without av and ad bristles. Abdominal T₃ with median marginal bristles.

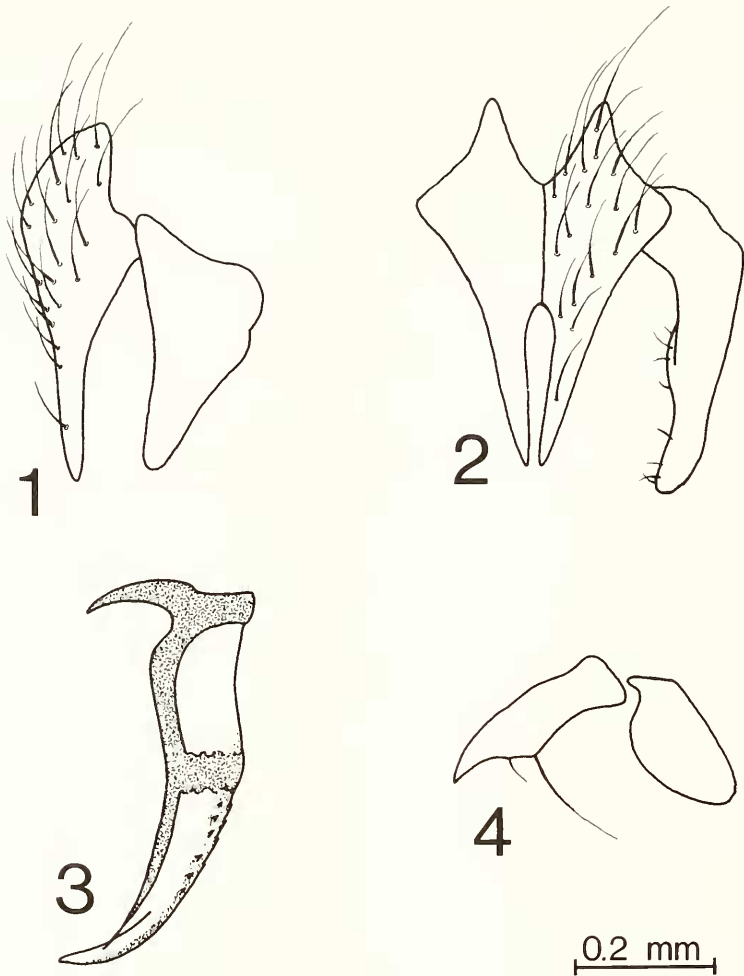
Description:

♂ **Head:** Eyes bare, enlarged, occupying almost all the side of the head. Frons at vertex 0.34x head width. Frontal vitta at level of anterior ocellus 3.0x the width of one fronto-orbital plate, width at lunula 0.4x the width at vertex. Frontal bristles rather weak except for the strong second pair from lunula and another strong pair separated from the first by a pair of setae. Two proclinate outer orbitals and 2 reclinate inner orbitals. Outer and inner verticals well developed, ocellars weaker than reclinate orbitals. Parafacial plate with about 10 bristles at inner margin close to facial ridge. Vibrissae well developed, with 2—3 supravibrissal setae. Lunula with a single asymmetrically placed seta. Third antennomere about 3.5x as long as second, arista longer than third antennomere.

Thorax: Brownish black with grey pollinosity. Chaetotaxy: acrostichals = 0 + ? (postsutural rows blurred by the pin), dorsocentrals = 2 + 3. Scutellum with 2 pairs of strong laterals, and 1 pair of apicals almost as strong as adjacent laterals. Notopleuron without hairs in addition to the usual 2 bristles. Postalar walls haired. Katepimeron with 3 hairs.

Wings: Hyaline, basicosta yellow, veins brown. Vein R₁ setose in full length except in middle. Vein R₄₊₅ setose distinctly beyond cross-vein r-m.

Legs: Brown. First tarsomere of fore tarsus slightly longer than combined length of tarsomeres 2—5. Fore tarsus without specialized hairs. Claws and pulvilli of all legs short. Mid tibia with an irregular row of short pd bristles, without ad or av bristles.



Figs. 1—4. *Metopia sinensis* nov. spec. ♂, terminalia. — 1. Cerci and surstyli, lateral view; — 2. Cerci and surstyli, posterior view (left surstylus and setae of left cercus omitted); — 3. Aedeagus, — 4. Paramere and gonopod.

Abdomen: Blackish brown. T3—T5 each with greyish pollinosity in anterior 0.6 and with a black unpollinose median stripe. T3 with a pair of median marginal bristles.

Length: 5.3 mm.

♀: Unknown.

Type-material. Holotype ♂, China: Hangchow, 14. IV. 1926 (T. P. CHAO) (USNM).

Distribution: China.

Biology: Unknown.

Remarks: The very large eyes; the long, tapering, and recurved distiphallus; the setal row of wing vein R_{4+5} , which extends beyond cross-vein r-m; the haired postalar walls;

and the reduced lunular setosity indicate a phylogenetic affiliation within the *juquiana* species-group [see PAPE (in press b) for a definition], which contains three Neotropical species in addition to *M. sinensis* nov. spec.

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